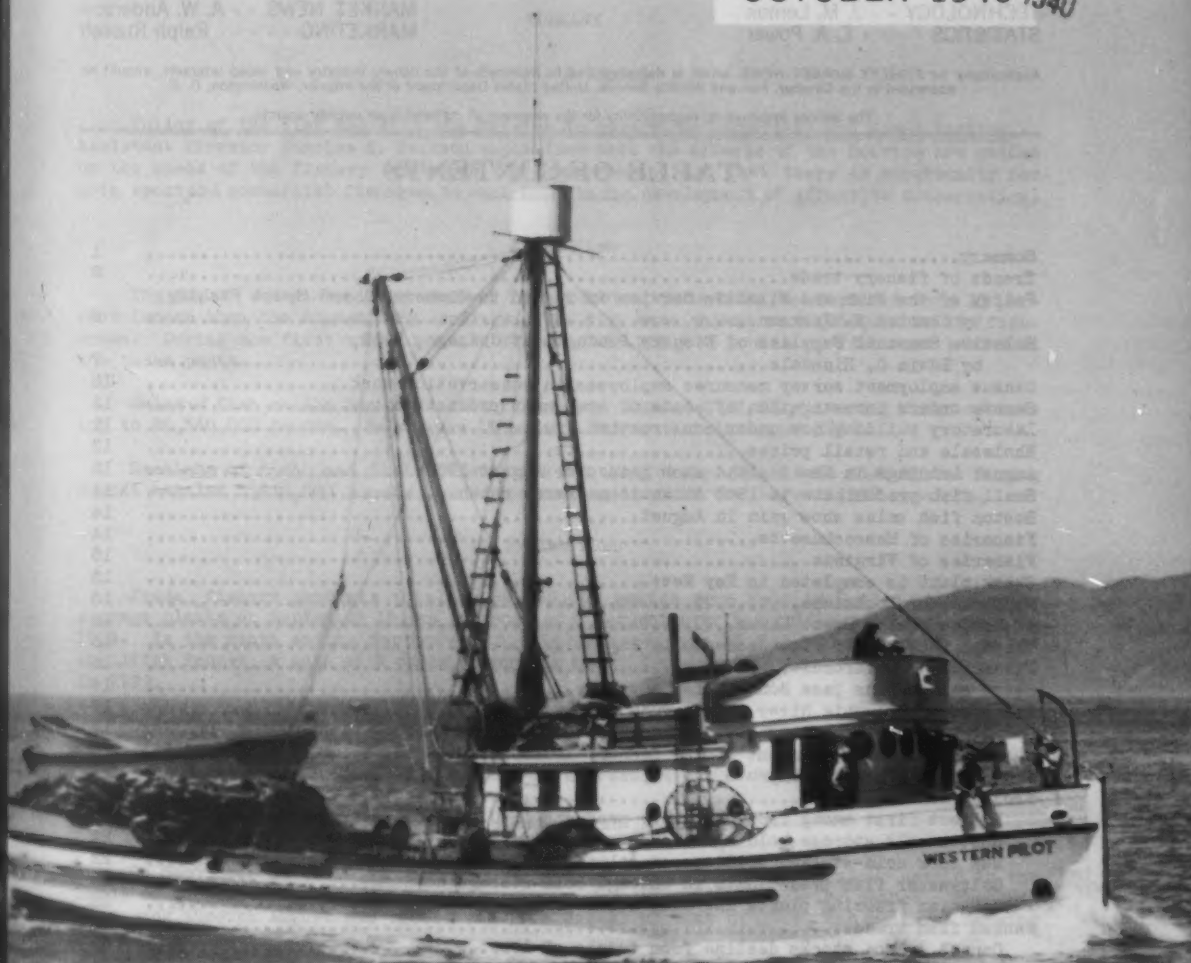


FISHERY MARKET NEWS

OCTOBER 1940 ^{NOV 40} 1940



ISSUED BY THE
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
WASHINGTON



FISHERY MARKET NEWS

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FISHERY MARKET NEWS

A REVIEW OF CONDITIONS AND TRENDS OF THE COMMERCIAL FISHERIES

October 1940

Washington, D. C.

Vol. 2, No. 10

SUMMARY

Special Articles

Policy of the Fish and Wildlife Service in regard to Commercial and Sport Fishing.-- Assistant Director Charles E. Jackson emphasizes that the efforts of the Service are guided by the needs of the fishery resources for conservation and that there is opportunity for both sport and commercial fishermen to contribute to the development of effective conservation.

Fresh Fish

The August vessel landings of fresh fish at Boston, Gloucester, and Portland were 15 percent larger than the August 1939 landings. The fish were valued at \$1,056,000 to the fishermen. During the first eight months of 1940, 238,339,000 pounds of fish were landed at the three ports.

Sales of fish on the Boston Fish Pier in August totaled \$797,000, covering fares amounting to 26,560,000 pounds. Sales were 15 percent larger than in August 1939.

Receipts of fish and fishery products at the Chicago Wholesale Fish Market during August totaled 3,640,000 pounds, an 11 percent gain over the August 1939 receipts.

Frozen Fish

Frozen fishery products totaling 85,568,000 pounds were held in United States cold-storage plants on September 15, an increase of 8 percent over the holdings of September 15, 1939. In the month ending September 15, 1940, there were 23,342,000 pounds of fish and shellfish frozen, a gain of 9 percent over the amount frozen during the corresponding period in 1939.

Distribution of the cold-storage holdings is partially indicated by reports of Market News offices showing 15,560,000 pounds held in Boston, 7,653,000 pounds stored in New York City, and 3,471,000 pounds on hand in Chicago the middle of the last week in September.

Canned Fish

On September 30 there were 1,624,000 standard cases of canned salmon unsold in the hands of packers. During September there were 234,000 cases of shrimp canned. The 1940 tuna pack through August was considerably in excess of that of 1939, and mackerel canning was also enlarged.

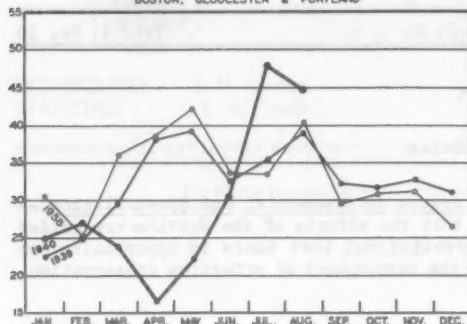
Foreign Trade

Foreign trade in edible fishery commodities in August totaled 33,271,000 pounds, 8 percent less than in August 1939. Imports amounted to 22,731,000 pounds. Between January 1 and August 31 there were 195,521,000 pounds of imports and 100,201,000 pounds of exports.

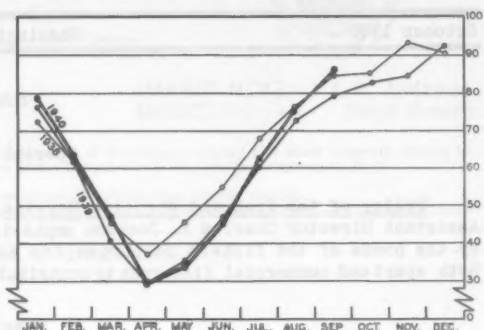
TRENDS OF FISHERY TRADE

IN MILLIONS OF POUNDS

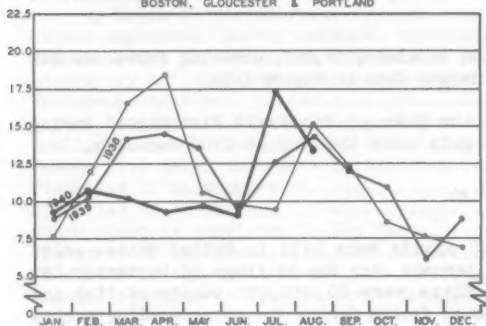
VESSEL LANDINGS, ALL FRESH FISH
BOSTON, GLOUCESTER & PORTLAND



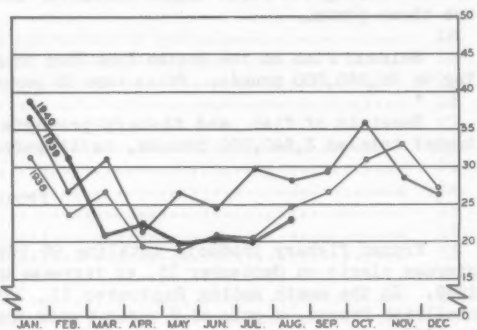
DOMESTIC COLD-STORAGE HOLDINGS OF FROZEN FISH



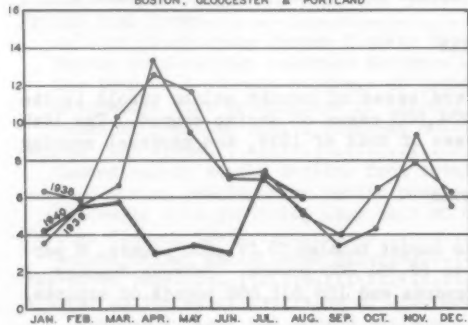
VESSEL LANDINGS, FRESH HADDOCK
BOSTON, GLOUCESTER & PORTLAND



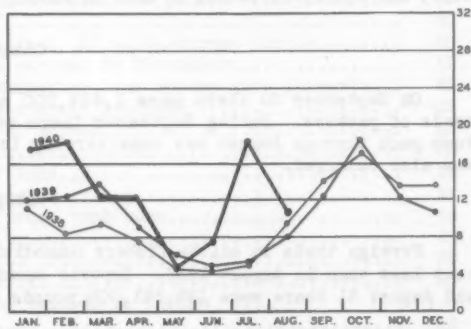
IMPORTS OF EDIBLE FISHERY COMMODITIES



VESSEL LANDINGS, FRESH COD
BOSTON, GLOUCESTER & PORTLAND



EXPORTS OF EDIBLE FISHERY COMMODITIES



POLICY OF THE FISH AND WILDLIFE SERVICE IN REGARD TO COMMERCIAL AND SPORT FISHING *

By Charles E. Jackson, Assistant Director

Fish and Wildlife Service

Mr. Chairman, fellow sportmen, I want first to express the appreciation of the Fish and Wildlife Service for your invitation to attend this meeting. When Mr. Guarino invited us to participate, he expressed the hope that our representatives would be men who are sympathetic to the problems of the sport fishermen, rather than men primarily concerned with commercial fishing interests. I sincerely hope that you will not consider any of our staff as taking sides in this important question of fishery conservation. The Service has in the past and will in the future divorce itself from any division whatsoever as between the commercial fishermen and the sport fishermen. We are not concerned with political issues or in local controversies between any groups of fishermen, whether it be between those seeking fish with a net, trap, or seine for the purpose of distributing food for public consumption, or those seeking the fish with hook and line for recreation. We feel that our responsibility is too great to take sides and we earnestly implore you to recognize that we have no favorites.

This meeting was called to register complaints and to plan a campaign of attack on objectionable conditions. In the field of conservation of fish and wildlife resources I must say that we do not suffer from lack of complaints. That is fine. Conservation has been built on complaints and is being maintained by them. If enough really good complainers had gotten to work in time we would still have passenger pigeons and heath hens. We must, however, first get straight whom you are opposing and to what you are objecting. The Fish and Wildlife Service is not attempting to sidestep any responsibility, but you must recall that the Federal Government does not make or enforce any laws or regulations governing fishing within the territorial waters of any State. When the Constitution was drafted, that power was reserved solely to the States. They, alone, are therefore legally responsible for the management of the fisheries everywhere except in the territories and possessions and on the high seas. The Fish and Wildlife Service, however, is responsible for recommendations to the States, based on our scientific research which we are prosecuting as far as funds permit, and we stand squarely on the recommendations we have made to the States in the past.

Now as to what you are complaining about. If it is about overfishing by commercial fishermen, then you do have a just right to complain. You can count on the Fish and Wildlife Service to support your complaints against justified cases of overfishing. But, if you are objecting to commercial fishing as such--if you insist that any commercial fishing is overfishing--you are going to find the Service on the other side in every fight you get into.

In other words, the Service is fighting overfishing, regardless of who is responsible. It is going to fight overfishing more aggressively and more effectively than ever before, but it is not fighting commercial fishing as such, and it is not going to be persuaded or



CHARLES E. JACKSON

* Delivered before a mass meeting of the Sportsmen's Council, Marine District of New York State, October 9, 1940.

badgered into a policy of automatic support of any and all legislative attacks on the commercial fishery. Nor on the other hand will it sympathize with attacks on recreational fishing.

Moreover, in its fight against overfishing the Service will be guided by the scientific findings of its very competent technical staff. It will proceed on the basis of well established facts and not on the basis of suspicion of overfishing or irresponsible charges of overfishing by anyone.

Does this mean that the Service is putting commercial interests ahead of recreational interests? Not at all. It has been the established policy of the old Bureau of Fisheries and is now the policy of the Fish and Wildlife Service of the United States Department of the Interior, under the direction of Secretary Ickes, that in case a fish resource is not sufficiently large to permit both commercial fishing and recreational fishing, the resource should be utilized in such a manner that the greatest number of citizens will receive the benefit; or, in other words, the resource will be reserved for the best economic use. In the case of many species this benefit undoubtedly will accrue to the recreational fishermen. On this basis the former Bureau of Fisheries actively sponsored and aided in securing the adoption of legislation, Federal and in 43 States, prohibiting the taking, transportation, sale, and possession of black bass for commercial purposes. The Service will follow this policy and urge its application to all fishing, fresh-water or marine, whenever and wherever the facts justify it.

The facts do not justify exclusion of commercial fishing for most marine fishes. The marine fisheries are much more productive than the fresh-water fisheries, most species of which, on the theory pronounced above, have been reserved for angling. The toll taken by a properly managed marine commercial fishery does not materially conflict with recreational interests. Consequently, exclusion of commercial fishing would lead to wasteful underutilization of these marine fishery resources.

It would protect your recreational interests, it is true, and very effectively. You have every legal right to advocate it. But the Service will not support you if you do. We know that your interests can be protected without injury to other important interests--the interest of the public in a valuable food supply and the interest of the fishermen in a means of livelihood. And let me reiterate that the fishery resources of the country belong not to the commercial fishermen, not to the recreational fishermen, but to all the people. And it is the responsibility of the Fish and Wildlife Service to promote the conservation and the rehabilitation of these fishery resources for the nation at large and for future generations.

I want to emphasize the point that a properly managed commercial fishery does not conflict with recreational interests. Lack of management has led to overfishing and overfishing does materially injure recreational interests. Bearing in mind that I am talking about overfishing, not just fishing, you have good reasons for kicking.

I shall not go into a technical discussion of overfishing now. It will be enough to say that some of the things to which you object most are not hurting you at all and that some of the things that are hurting your interests most are not generally known. These balance pretty well, so that everything considered, you are justified in demanding more protection from overfishing than you are getting.

I want to tell you now how that protection can be given you. Three essentials must be provided. These are: First, a practical management policy; second, unified or coordinated jurisdiction over migratory fishes; third, adequate technical information. Because all three have been lacking in the past, the efforts of the conservation departments of the Atlantic Coast States and of the former Bureau of Fisheries have been hampered seriously during the past seventy years.

Let us see how the lack of these essentials has prevented effective control of overfishing. First, let us see how an impractical policy has affected conservation effort. It has always been taken for granted that no direct limitation could be placed on the numbers of fishermen engaged in commercial fishing. We know now that overfishing cannot be controlled unless the numbers of commercial fishermen are directly limited by license quotas. Let us see why.

The only corrective for overfishing is less fishing. There are only two ways to fish less--fewer fishermen or part-time operation. The first has been barred by the long-standing taboo against license quotas and the second is impractical. Commercial fishing is a competitive business, with a small marginal profit. As in other businesses, the cost of equipment and the running expenses must be met before the owner can take a profit. Part-time operation reduces gross income but the expenses go on just the same. The fishermen know that they just cannot make a go of part-time operation. Even if the fight ends in a compromise, the reduction in fishing is seldom enough to do much good, and any good accomplished never lasts very long. Even if reduced fishing leads to an increase in abundance and the fishermen begin to make a little money, more fishermen take out licenses. That means overfishing and the whole business must be done over again, this time with more fishermen to object.

Sometimes, one group of commercial fishermen will organize to cut down fishing by putting another group out of business, usually with enthusiastic support of sportsmen. That is why many of the Atlantic Coast States bar otter trawling. A few years ago Maryland barred purse seining. But for every purse seine put out, several gill nets came in, so that overfishing for striped bass went merrily on.

In other words, we have been vainly trying to approve the idea of individual fishermen fishing as much gear as possible in an effort to make a dollar in the face of stiff business competition and heavy overhead expenses even though we have come to realize that less intensive fishing is really necessary in some fisheries for biological or conservation reasons. These opposite situations or ideas cannot continue if unsatisfactory conditions are to be corrected. We must face the fact that our fishery resources can support only a certain number of fishermen in order that each individual can receive a reasonably fair income for his efforts and without endangering or unwisely using the available supply.

To some, this idea of restricting the number of individuals who will have access to a natural resource or public property may seem radical. There are, however, a number of precedents. For example, the air might be considered a natural resource. In the early days of radio it was taken for granted that anyone who wanted to start a broadcasting service should be given a license. But pretty soon people began writing to Congress that the broadcasts of the New York Philharmonic orchestra were interfering with their reception of Amos and Andy. The kicks became a roar. Very soon broadcasting became a privilege and a license a very valuable asset.

Now the biological limitations on how much fishing can be done are analogous to the physical and engineering limitations on how many stations can broadcast simultaneously. The principal difference is that the Amos and Andy fan knew right away what was wrong and who was responsible. He could tell the difference between static, which his Congressman couldn't do anything about, and the symphony music which his Congressman could do something about. Consequently, the kicks were direct, pointed, and immediate. But you fishermen couldn't be sure at first whether a day's poor fishing was plain static, i.e., was just poor luck, or the result of a natural change in abundance, or whether it was the result of overfishing. As a matter of fact, some of the interference you are kicking about now is static and as we will see later, you can't blame all of your trouble on the commercial fishermen of New York. Some of your interference is coming from as far away as North Carolina.

Another example is to be found in the experience with conservation on the public lands. For years, overgrazing was as difficult a problem as overfishing. The Taylor Grazing Act of 1934 recognized the impossibility of accommodating all of the stockmen who sought to graze their herds on the public land and set up a practical system of quotas and licenses.

We have discussed this matter of change of policy with commercial fishermen in several localities in connection with our program for restoration of the shad fisheries. Instead of opposing it, they have endorsed it, and in Maryland and Virginia committees of commercial fishermen are working actively with the conservation departments of the two States to work out a legislative program to put it into effect. So this idea meets both requirements for sound conservation legislation. It will work if adopted, and, equally important, there are very good prospects for its adoption.

The second essential is unified or coordinated jurisdiction. These fish are migratory. A few minutes ago I told you that some of your interference was coming from as far away as

North Carolina. Objectionable conditions that exist in some of our southern States must be corrected if better fishing is to be attained in some of our northern States such as New Jersey and New York. As a matter of fact, the scientific studies made by the former Bureau of Fisheries during the past thirteen years indicate that the intensity of fishing in New York is much less than it is in other States visited by the fish you are trying to catch. We might almost say that a fish which escapes to New York from the intensive southern fisheries has practically gotten into a fish sanctuary.

Consequently, even if commercial fishing in New York is eliminated you will have made only a beginning toward protecting yourselves from overfishing. In the long run you will get less benefit than at the beginning, for elimination of New York production from markets will simply stimulate fishing in other States.

There is now under consideration a program for providing coordinated jurisdiction through an interstate compact. This compact idea has been approved by Congress. Until it is ratified or until some other means for insuring coordinated effort is provided, the Service and all of the States will be hampered in their efforts to check overfishing for some species.

The third essential is adequate technical information. The Service does not hesitate to make definite recommendations when it is certain that changes are needed.

For example, in North Carolina the Service has definitely recommended elimination of half of the nets used for shad fishing. This was the first result of scientific investigations which eliminated pollution, migration, natural fluctuation, etc., as causes of the decline in the shad runs and fixed the responsibility as overfishing. These scientific studies also indicated that the nets in North Carolina are taking 90 percent of the runs and letting only 10 percent spawn. Knowing from similar studies in the Hudson that 50 percent of the runs must be protected to bring about recovery, it was possible to make the recommendations definite and unequivocal. Four years ago we could not make definite shad recommendations, but those interested in the restoration of the valuable shad runs made it their business to do something about it. They enlisted the services of a single Congressman, who persisted until an appropriation was provided to properly study this problem. Result--definite facts upon which to base definite recommendations, but it has required three years of intensive study with the use of a continuing appropriation.

The only reason that similar recommendations for Atlantic Coast game fishes have not been forthcoming is that we still lack the definite and comprehensive information which made these recommendations possible. I shall not go into technical details. It will suffice to say here that fishery biology is a relatively new science. It is also one that offers great technical difficulties. The Bureau of Fisheries has long been hampered, not only by lack of research appropriations but by lack of basic catch record information which only the States have authority to require from commercial fishermen and sportsmen. If the States and the Federal Government are to meet their responsibility to the consuming public, to sportsmen, and to commercial fishermen, they must get together not only as an administrative unit but as a research unit as well.

And now for a constructive criticism. How can we make our legitimate kicks effective? As sportsmen, how can we pull together to secure a recognition of our justifiable demands? As conservationists, how can we overcome the abuses and mismanagement of our marine fisheries that lead to overfishing? I have always been an advocate of group action through organization. You already have a framework of clubs and fish and game protective associations among both anglers and commercial fishermen. These organizations should be strengthened and points of view for their programs should be coordinated and harmonized. Through such strengthening of organization the collective wisdom of these groups will be brought to bear on legislative committees and administrative officers.

I have already pointed out that a start has been made toward centralized management of the marine fisheries by means of interstate compacts as a cure for piecemeal administration of a single fishery resource now controlled by the several States operating independently and frequently at cross purposes. May we suggest, therefore, that groups of sportsmen such as are assembled here urge and support the conservation offices of the States and their State legislatures to obtain early adoption of some sort of interstate fishery compact for the entire Atlantic Coast area. Such a compact can accomplish a great deal in coordinating interstate cooperation in conjunction with federal assistance. If you write to your conser-

vation departments or, in New York, if you write to your Commission of Interstate Cooperation, you can obtain the preliminary draft of the compact that has been proposed. Then you can examine its provisions, and possibilities for unified action, propose any modifications you desire and above all, urge constructive action in developing the right kind of control. This is a job that each of you as marine anglers should regard as a personal obligation.

Let me ask you as sportsmen what you have done to build up our fishery resources or protect them. Aside from a running fire of criticism, some of it constructive, no doubt, what have you done individually to aid the State conservation departments or the Fish and Wildlife Service to acquire the necessary information on which any acceptable or effective conservation program must be based? Have you ever written to your Congressman to tell him of the vital need for Federal support of fishery research? Have you ever told your State Assemblyman that your conservation department needs money for the constructive work of fact-finding as well as for the activities of law enforcement? Do you yourself contribute one penny, as marine anglers, to swell the conservation fund in your State for such purposes?

How can you expect either your State or Federal Government to protect your interests if they have no funds to work with? The trout fisherman and the hunter pay for hatcheries, refuges, stream improvement, pollution control, and management research. And so I ask you again, what do the salt-water anglers contribute toward a solution of these problems?

I shall conclude with a word of advice to commercial fishermen, also. We have seen that lack of management has led to overfishing, and I have indicated the requirements for a program of scientific management. The organized commercial fishermen should put their house in order if they are to avoid a swing of public opinion in the direction of too drastic correction of past and present mistakes.

RELATIVE SEASONAL SUPPLIES OF FISHERY PRODUCTS AT CHICAGO, 1939

By Edwin C. Hinsdale, Fishery Marketing Agent
Division of Fishery Industries

Fish and Wildlife Service

To make it possible for persons in the fisheries trade and others interested in the supply of fishery products for food to readily determine the relative abundance of supplies of various fishery products on the wholesale market in Chicago, indices of abundance by months have been prepared from the 1939 annual summary issued by the Chicago Fishery Market News Service office.

I. By Kinds of Products

In the first column of the index of Chicago receipts by kinds of products appears the total annual receipts of each variety; in the second column the largest quantity of each item received during any one month is shown; and in the following 12 columns, covering the period from January to December 1939, are the receipts for each month for each variety expressed as percentages of its greatest monthly volume. The receipts during the month of greatest volume are represented as 100 percent in each case. The index system is exemplified as follows: Lake trout received totaled 5,085,482 pounds for the 12-month period and the largest monthly quantity of lake trout arriving was 965,118 pounds received during November; therefore, the basic index (100) for this item is listed for November. The indices for the remaining 11 months are computed as percentages of 100. During January, 275,414 pounds of lake trout arrived, and as this figure is 26 percent of the amount of the lake trout received in November, the index for January is 26. Indices for the remaining months are calculated in the same manner.

Indices for 93 of the more important classifications are included in the table.

In the Chicago Wholesale Fish Market receipts, eight important items occurred throughout the year in fairly uniform or consistently large monthly quantities. These were buffalo-fish, carp, chubs, lake herring, lake trout, suckers, whitefish, yellow perch, yellow pike,

frozen rosefish fillets, and shrimp. Other important items received each month but in amounts not consistently large or in abruptly varying quantities included bullheads, catfish, pickerel (jacks), sheepshead, frozen cod fillets, frozen haddock fillets, red snapper, hard clams, crab meat, and lobsters. Definitely seasonal items were blue pike, eels, sauger, smelt, halibut, salmon, shell and shucked oysters, and most of the frozen items. Of the latter items, some were made seasonal by periodicity of supply and others show large increases in certain months because of large shipments made to satisfy large seasonal demands.

A greater volume of fishery products was received in October than in any other month, and November was second, 7 percent behind the October total. The greatest poundage of fresh-water fish entered during March, with the amounts for October and November 6 percent and 7 percent less, respectively. October showed the largest volume of salt-water items handled, with September the second largest month, having a total 12 percent smaller. November brought the largest poundage of shellfish, leading December by 1 percent and October by 4 percent. February showed the least total volume for all classifications combined, and was the lowest period for receipts of fresh-water items. April receipts of salt-water products were the smallest in that classification, and March was the month of least activity in shellfish.

Monthly Index of Certain Fishery Products Received at the
Wholesale Market, Chicago, Illinois, 1939 - By Products

(Expressed for each item in percentages of its greatest monthly volume)

Item	12 months	Greatest month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRESH-WATER FISH	Pounds	Pounds												
Blue pike	1,100,472	284,133	1	-	5	10	100	70	19	43	16	33	69	24
Brook trout	5,915	1,485	34	-	69	17	21	100	5	7	53	58	33	7
Buffalofish	665,312	73,796	67	17	78	99	95	52	93	90	100	87	61	62
Bullheads	285,041	54,968	39	20	9	21	66	29	41	31	75	100	53	35
Carp	1,657,327	210,266	52	47	92	83	100	62	43	56	77	63	62	52
Catfish	258,779	36,007	22	10	15	24	84	100	85	85	83	66	93	50
Chubs	1,179,619	138,629	64	36	34	43	60	63	94	100	86	90	92	88
Cisco	30,749	22,320	-	-	-	13	-	-	-	100	-	1	9	15
Crappie	8,114	3,160	-	-	-	-	-	-	-	-	25	64	68	100
Eels	124,826	54,051	-	*	9	*	7	1	6	11	16	100	61	19
Lake herring	2,291,448	289,856	65	31	89	77	77	78	64	28	21	87	100	73
Lake trout	5,085,482	965,118	26	14	23	28	58	46	44	44	47	62	100	36
Lake trout, frozen	160,162	73,875	-	2	49	5	2	-	-	-	41	19	-	100
Menominee	36,512	8,595	4	3	7	62	37	26	28	46	20	23	100	69
Pickerel (jacks)	288,601	42,957	41	15	45	82	47	40	58	50	88	100	55	52
Pickerel (jacks), froz.	13,472	6,928	-	63	100	11	-	-	-	-	-	-	20	-
Rock bass	23,833	5,083	-	-	-	52	100	64	42	27	86	88	8	1
Sauger	2,210,494	744,817	100	51	62	22	4	3	*	*	9	31	4	11
Sauger, frozen	1,293,560	739,274	10	13	100	9	-	2	6	5	12	6	2	8
Sheepshead	749,031	211,295	35	13	33	14	100	57	23	10	13	28	13	15
Smelt	1,025,289	498,287	2	14	36	100	6	9	7	10	7	5	4	6
Smelt, frozen	28,944	22,380	100	18	-	-	-	-	-	-	-	-	8	3
Suckers	879,820	111,284	47	42	32	100	73	98	82	62	86	66	50	55
Sunfish	20,178	10,418	-	-	-	-	-	-	7	2	27	100	52	6
Tullibee	63,048	25,376	-	-	-	-	-	-	-	59	100	85	2	3
Tullibee, frozen	53,361	39,899	15	100	*	-	-	-	-	-	-	-	19	-
Tullibee fillets	9,033	3,605	-	-	-	-	-	7	40	19	72	100	12	-
White bass	41,641	15,601	-	-	-	-	-	-	11	62	63	100	28	2
Whitefish	2,718,910	341,114	68	25	50	22	53	79	100	69	72	80	96	82
Whitefish, frozen	354,449	143,664	4	42	100	4	7	2	-	20	-	67	-	-
Yellow perch	2,459,714	327,309	65	28	48	61	74	31	48	59	62	94	80	100
Yellow perch, frozen	23,550	14,393	3	12	39	4	-	100	-	-	-	5	-	-

Monthly Index of Certain Fishery Products Received at the
Wholesale Market, Chicago, Illinois, 1939 - By Products--Continued

(Expressed for each item in percentages of its greatest monthly volume)

Item	12 months	Greatest month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
FRESH-WATER FISH-- Pounds	Pounds													
Continued														
Yellow pike	1,650,114	272,774	84	32	37	100	77	45	28	29	57	53	38	28
Yellow pike, frozen	56,929	23,582	26	17	100	43	-	17	-	-	-	7	32	-
Unclassified	37,235	6,660	14	12	35	19	19	*	25	64	96	100	78	97
Total	26,891,000	2,965,291	81	47	100	79	85	68	62	61	69	94	93	68
SALT-WATER FISH														
Bluefish	26,362	15,070	-	-	*	3	31	5	35	6	3	6	17	100
Butterfish	22,237	6,490	5	-	-	-	42	89	100	37	19	18	12	22
Cod	62,415	11,380	94	16	26	48	58	18	16	50	52	100	32	38
Cod fillets, frozen	411,945	90,055	89	11	43	39	35	33	10	33	100	9	38	16
Croaker	47,275	19,915	-	-	100	-	-	-	45	8	6	77	-	-
Flounders	62,961	11,795	16	23	28	100	99	67	28	26	28	48	20	49
Haddock	82,365	16,155	49	13	28	88	22	19	100	20	31	35	24	81
Haddock fillets, froz.	501,345	92,765	37	33	21	33	33	25	71	64	100	19	20	82
Halibut	3,526,828	679,791	-	-	-	40	100	53	87	73	80	81	5	-
Halibut, frozen	3,198,085	628,447	59	63	95	7	-	13	5	10	36	54	100	69
Herring, sea (sardine)	72,275	31,500	25	6	-	1	-	-	23	-	62	-	100	13
Jewfish (warsaw)	10,185	2,170	28	24	-	46	55	-	-	37	60	73	46	100
Mackerel	110,224	21,684	15	-	4	4	74	49	27	34	100	89	72	39
Mackerel, frozen	26,110	10,000	-	-	-	-	-	-	60	-	100	-	5	10
Mullet	13,429	5,307	2	4	-	-	-	-	-	-	8	58	100	82
Pollock fillets, froz.	265,210	53,605	-	100	59	98	40	47	14	11	-	3	58	65
Pompano	39,222	17,148	17	-	-	2	9	1	7	15	13	35	31	100
Rosefish fillets froz.	1,938,955	279,550	50	44	50	59	42	57	42	60	91	100	60	38
Sablefish, frozen	49,961	22,816	28	18	100	-	-	-	-	-	-	43	30	-
Salmon:														
Chum (fall)	15,200	15,200	-	-	-	-	-	-	-	-	-	100	-	-
Chum (fall), frozen	198,275	53,850	19	61	4	-	-	-	-	28	-	77	100	73
King (chinook)	237,179	58,175	-	-	-	3	78	100	86	94	36	10	-	-
King (chinook), froz.	85,250	38,750	-	4	-	-	-	-	-	-	2	100	50	64
Pink (humpback)	28,500	21,000	-	-	-	-	-	-	-	36	100	-	-	-
Silver	305,644	129,888	-	-	-	-	-	4	22	32	48	100	30	-
Silver, frozen	183,935	47,738	17	20	36	16	-	-	-	21	2	90	84	100
Unclassified, froz.	181,945	82,901	100	25	84	11	-	-	-	-	-	-	-	-
Scup (porgy)	33,631	7,396	22	17	4	12	46	61	43	14	17	100	48	71
Sea bass	35,013	11,359	2	4	5	15	20	100	50	11	6	17	60	17
Shad	53,084	27,578	-	3	6	100	84	-	-	-	-	-	-	-
Snapper, red	236,789	69,838	24	16	6	24	51	2	17	15	18	42	24	100
Sole:														
Gray	8,956	2,537	88	6	4	41	4	-	-	18	-	77	16	100
Lemon	6,938	2,800	4	-	42	56	3	4	100	-	-	23	11	5
Fillets	6,300	4,000	-	-	-	30	15	13	100	-	-	-	-	-
Fillets, frozen	45,009	21,594	81	-	26	1	-	-	-	-	-	-	-	100
Spanish mackerel	37,920	32,170	10	3	*	-	2	-	-	-	-	3	-	100
Swordfish, frozen	15,756	10,000	-	-	-	13	42	-	-	-	-	-	3	100
Whiting	107,165	45,875	18	100	11	1	5	2	7	53	-	10	*	26
Whiting fillets, froz.	88,431	15,395	-	-	71	39	81	10	45	78	100	10	62	78
Wolffish (catfish)	12,770	5,140	-	19	-	-	-	-	-	29	-	99	-	100
Unclassified	87,640	15,571	67	14	16	34	41	24	36	65	100	94	51	48
Total	12,475,719	1,620,316	51	46	61	44	67	49	62	64	88	100	68	64

Monthly Index of Certain Fishery Products Received at the
Wholesale Market, Chicago, Illinois, 1939 - By Products--Continued

(Expressed for each item in percentages of its greatest monthly volume)

Item	12 months	Greatest month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SHELLFISH, ETC.	Pounds	Pounds												
Bullfrogs	4,475	2,344	-	26	52	100	8	-	-	-	-	5	-	-
Clams, hard	142,715	39,308	14	19	18	13	31	3	14	8	22	55	65	100
Crabs:														
Hard	25,742	8,020	9	9	14	100	25	9	15	12	45	50	13	18
Soft	51,402	11,676	-	2	11	53	88	100	28	95	48	15	-	-
Crab meat	79,484	11,765	29	14	17	48	100	47	52	45	62	99	74	88
Crawfish	6,456	4,656	-	-	-	-	-	-	20	-	100	19	-	-
Frog legs	17,775	4,710	9	2	5	9	17	27	73	62	25	100	8	40
Lobsters, common	207,425	33,078	29	22	25	29	59	31	36	32	77	97	100	90
Oysters, shell	742,938	154,460	75	37	37	34	-	*	-	2	39	93	100	64
Oysters, shucked	1,085,202	229,056	43	87	29	9	-	*	-	-	43	82	80	100
Scallops, sea	103,576	22,810	-	-	7	26	99	1	29	4	45	80	100	61
Shrimp	5,927,704	895,700	27	12	13	26	100	87	59	46	46	79	84	83
Shrimp, frozen	470,764	113,540	-	-	18	81	26	-	-	-	26	100	82	82
Spiny lobster tails	84,435	26,315	-	36	17	15	39	11	10	-	*	20	73	100
Squid, frozen	90,204	34,742	-	-	7	18	100	14	61	6	13	1	34	6
Turtles, snapping	11,449	2,598	-	100	-	82	5	27	61	29	13	36	*	88
Unclassified	180	150	100	-	20	-	-	-	-	-	-	-	-	-
Total	9,052,026	1,302,276	37	30	22	35	81	63	46	35	51	96	100	99
Grand total	48,418,745	5,658,461	66	45	75	62	82	64	61	58	73	100	93	77

* Less than $\frac{1}{2}$ of one percent.

Includes all arrivals as reported by express and rail terminals, and truck receipts as reported by wholesale dealers, including firms smoking fish. Weights are net weights of fishery products as received.

II. By Points of Origin

Fishery products were supplied to the Chicago Wholesale Fish Market in 1939 from 31 States, Alaska, and 8 Provinces of Canada. Indices have been determined which represent the comparative monthly contributions to the Chicago receipts from these points of origin. These indices are presented in an accompanying table. They have been determined and are presented in similar manner to the treatment of the receipts by products that is presented in the first part of this article.

Illinois, Louisiana, Massachusetts, Michigan, Wisconsin, Alaska, and British Columbia furnished a fairly constant and consistently large supply of fishery products each month throughout the year. Other important points of origin, including the States of Florida, Iowa, Maryland, Minnesota, New York, Virginia, Washington, and the Canadian Provinces of Manitoba and Ontario provided supplies each month that were either not consistently large or that manifested abrupt variations one or more times during the year. The outstanding examples of points furnishing fishery products seasonally were New Jersey, Ohio, Oregon, Alberta, Manitoba, and Saskatchewan.

Monthly Index of Certain Fishery Products Received at the
Wholesale Market, Chicago, Illinois, 1939 - By Origin

(Expressed for point of origin in percentages of its greatest monthly volume)

Origin	12 months	Greatest month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DOMESTIC	Pounds	Pounds												
Alabama	259,070	55,580	53	26	8	21	75	-	34	18	5	100	35	92
Arkansas	932	700	-	-	100	15	3	-	-	-	-	-	15	-
California	28,912	28,612	*	*	-	*	100	-	-	-	-	-	-	-
Colorado	436	196	-	-	-	-	-	-	-	-	58	100	49	15
Connecticut	17,294	7,308	-	-	-	-	-	-	-	-	80	37	100	19
Delaware	180	180	-	-	-	-	-	-	-	-	-	100	-	-
Florida	244,400	104,786	10	5	4	8	30	2	5	4	16	24	25	100
Georgia	137	128	-	-	-	-	-	-	-	-	100	7	-	-
Illinois	1,608,786	292,601	57	35	100	77	23	21	17	34	25	49	69	54
Indiana	169,956	35,035	53	49	100	42	14	14	15	4	30	7	90	68
Iowa	960,479	143,558	53	7	49	57	57	44	68	49	63	100	59	64
Louisiana	4,279,053	757,170	20	6	18	33	100	80	55	52	16	28	71	86
Maine	276,223	63,901	32	-	81	74	*	4	9	*	41	19	100	71
Maryland	291,107	105,249	42	100	13	28	22	11	2	11	12	10	16	9
Massachusetts	3,370,527	416,997	43	63	39	71	68	64	55	75	99	100	76	54
Michigan	6,219,304	910,614	30	11	26	62	84	68	51	50	61	67	100	72
Minnesota	1,740,927	430,123	39	6	2	12	13	26	36	43	50	100	39	38
Mississippi	55,969	21,085	67	68	5	-	-	3	100	*	-	10	5	6
Missouri	7,678	2,175	20	100	97	17	25	45	3	7	7	4	22	4
New Jersey	269,404	71,900	32	16	23	2	8	*	-	-	48	90	56	100
New York	987,888	178,230	58	27	43	40	34	24	25	6	49	92	100	57
North Carolina	36,924	12,259	23	8	16	39	24	-	2	3	9	16	100	62
Ohio	2,489,164	757,495	*	*	4	53	100	47	20	22	19	20	41	3
Oregon	95,925	60,756	1	1	2	2	2	1	2	1	*	100	44	1
Pennsylvania	121,497	18,850	-	-	-	76	51	53	3	79	100	90	96	95
Rhode Island	22,735	13,890	-	-	4	7	-	-	-	-	9	100	-	43
South Carolina	890	450	-	100	-	29	69	-	-	-	-	-	-	-
Texas	2,073,616	589,021	11	8	-	15	26	31	16	4	56	100	53	33
Virginia	819,483	192,948	26	57	39	15	7	1	8	3	28	66	74	100
Washington	1,116,308	199,172	36	13	28	17	61	28	34	4	96	100	67	41
Wisconsin	5,764,630	810,466	33	41	62	100	75	66	68	48	52	59	65	54
Alaska	1,324,514	263,346	84	52	100	17	45	39	38	28	14	31	34	22
Total	34,654,349	4,169,652	47	34	49	74	96	72	58	56	69	96	100	81
IMPORTED 1/														
Alberta	1,041,979	203,253	96	34	100	19	-	50	55	56	66	-	-	36
British Columbia 2/	3,616,089	535,331	36	56	69	49	91	65	99	100	36	52	9	13
B. C. (In bond) 3/	1,895,735	556,986	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	82	100	94	65
Manitoba	4,917,324	1,370,728	87	50	100	6	1	4	18	14	20	34	6	19
New Brunswick	69,132	24,982	100	9	6	1	1	5	11	15	22	33	36	37
Nova Scotia	513,631	133,840	100	18	35	-	*	-	29	19	82	-	17	84
Ontario	1,346,923	360,514	2	4	6	11	38	33	29	29	26	72	100	24
Quebec	107,470	52,570	-	-	-	-	-	-	4	10	14	100	57	20
Saskatchewan	256,113	169,106	5	29	100	-	-	-	2	-	*	16	-	-
Total	13,764,396	2,181,776	80	52	100	20	30	29	48	45	58	75	49	45
Grand total	48,418,745	5,658,461	66	45	75	62	82	64	61	58	73	100	93	77

*Less than 1/2 of one percent.

1/ Includes catch taken by U. S. vessels and shipped through Canada to the United States in bond.

2/ Includes "In bond" shipments prior to September 1939.

3/ Consists of catch taken by U.S. vessels and shipped through Canada to the United States in bond.

(a) Data not available.

The figures tabulated in this analysis include all receipts at Chicago as reported by express and rail terminals, and truck receipts as reported by wholesale dealers, including smokers. The weights shown represent the net weight for fishery products as received.

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CENSUS EMPLOYMENT SURVEY MEASURES EMPLOYEES IN CONSERVATION WORK

The Quarterly Employment Survey, covering phases of employment in State and local governments, states in its September 5 issue that out of every 20 State employees, 6 work on highways; 4 are employed in State hospitals; 4 are engaged in social welfare and protective activities; 2 are occupied in general administrative, legislative, and judicial work; 1 is assigned to the development and conservation of natural resources; and the remainder function in various other activities. The figures used as a basis for the survey disclosed that 5.7 percent of the State employment is utilized in development and conservation of natural resources.

SENATE ORDERS INVESTIGATION OF COSTS OF CRAB MEAT PRODUCTION

On September 27 the United States Senate agreed to the following resolution (S. Res. 200): "Resolved, That the United States Tariff Commission is hereby directed to investigate, for the purposes of section 336 of the Tariff Act of 1930, the differences in the cost of production between the domestic article and the foreign article, and to report at the earliest date practicable, upon crab meat, fresh or frozen (whether or not packed in ice), or prepared or preserved in any manner, including crab paste and crab sauce."

The section of the Tariff Act of 1930 referred to provides for investigation by the Commission of differences in the costs of production of any domestic article and any like or similar foreign article. The Commission shall investigate, by public hearing and otherwise, these costs of production and report to the President its findings, specifying increases or decreases in the duty rates fixed by statutes which will equalize the differences in cost. Rates fixed by statute cannot, however, be specified for increase or decrease of more than 50 percent in this procedure. The President shall approve the rates of duty and changes in classification specified in the report if in his judgment the changes are necessary to equalize the differences in production costs.

Section 336 provides further that operation of its provisions shall not be authority to transfer an article from the dutiable list to the free list, nor from the free list to the dutiable list, nor to make a change in the form of duty.

As a result of the passage of S. Res. 200, the Tariff Commission, on October 24, issued this notice: "NOTICE IS HEREBY GIVEN, pursuant to Section 336 of the Tariff Act of 1930, and the Rules of Practice and Procedure of the Tariff Commission, that public hearings . . . will be held in Room 307, Post Office Building, Seattle, Washington, on the 4th day of December, 1940 and at the office of the United States Tariff Commission in Washington, D. C., on the 11th day of December, 1940, each hearing beginning at 10 a.m. At these hearings all parties interested will be given opportunity to be present, to produce evidence, and to be heard with regard to the differences in costs of production of, and all other facts and conditions enumerated in Section 336 of the Tariff Act of 1930 with respect to, the following articles described in paragraph 721 (a) of Title I of said tariff act, namely,

Crab meat, fresh or frozen (whether or not packed in ice), or prepared or preserved in any manner, including crab paste and crab sauce."

LABORATORY BUILDING NOW UNDER CONSTRUCTION

Ground was broken on August 8 for the new laboratory building of the Fish and Wildlife Service at the University of Maryland, College Park, Md. The building has been designed in the Georgian style to harmonize with other structures on the campus. The new building will

be a unit in the group of laboratory buildings of the Department of the Interior, which are situated on land donated by the State of Maryland. The first of these, the Eastern Research Laboratory of the Bureau of Mines, was completed in 1937. It is expected that this arrangement will give the Service the benefit of University facilities and provide graduate students of the University greater opportunity for conducting research on fishery problems.

The nutritional researches of the Service, doubly important now that the United States must find new sources of oils high in vitamins A and D, have been conducted in cramped temporary quarters. A specially planned nutrition laboratory is provided in the new building.

The new building will include what is believed to be the most completely equipped experimental fish-canning laboratory in the United States, and a laboratory equipped for studies in refrigeration and fresh-fish handling. Space also is provided for work on salting, smoking, and other methods of preservation. Three chemical laboratories will permit extension of research into the protein and mineral content of fish and shellfish, and the development of chemical treatments to prolong the life of fishing gear. A bacteriological laboratory will permit study of problems in handling crustacea and shellfish, and other bacteriological problems arising in the fishing industry.

In addition to the technological laboratories, the building will contain the headquarters of the Middle Atlantic Fisheries Investigations, with laboratories for the study of biological problems in fisheries. This will also be made the headquarters of the Atlantic Shellfish Investigations.

In addition to the various laboratories and offices there will be a library on fishery subjects and a conference room. It is expected that the building will be ready for occupancy early in 1941.

WHOLESALE AND RETAIL PRICES

The index of wholesale commodity prices computed by the Bureau of Labor Statistics stood at 77.7 percent of the 1926 average on September 28, a position identical to that of August 31. The index for foods, however, dropped from 71.4 to 70.8 in the interval between these dates. The all-commodity index dropped 2.3 percent and the foods index fell 4.8 percent between September 30, 1939, and September 28, 1940.

Retail food costs increased 1 percent from mid-August to mid-September, according to the Bureau of Labor Statistics. On September 17 the average retail price of 52 foods stood at 97.2 percent of the 1935-39 average. The index on September 19, 1939, was 98.4 percent.

The retail food indices were determined from prices in 51 cities, and in 44 these food costs advanced during the monthly period ending September 17. Pink salmon averaged 15.7 cents per 16-ounce can on September 17, dropping 1.3 percent from the price of August 13 but a rise of 15.4 percent above the September 19, 1939, average. The price of red salmon per 16-ounce can was 25.9 cents, .4 percent and 6.6 percent higher, in respective order, than the August 13, 1940, and September 19, 1939, averages.

AUGUST LANDINGS IN NEW ENGLAND SHOW GAIN OVER AUGUST 1939

The August landings of fishing vessels of 5 net tons and over at Boston and Gloucester, Mass., and Portland, Maine, represented increases of 15 percent in volume and 23 percent in value over those of August 1939. There were 44,858,000 pounds, valued at \$1,056,000, landed in August 1940, according to Fisheries Statistical Bulletin No. 1401. Predominant among items contributing were haddock, rosefish, cod, mackerel, whiting, and flounders. Of these, mackerel and whiting showed substantial gains over the landings of August 1939. Boston received 62 percent of the landings, Gloucester 28 percent, and Portland, 10 percent.

Landings since January 1 continued to total less than the corresponding totals for 1939. During the first eight months of 1940 there were 238,339,000 pounds landed, valued at \$6,772,000. This constituted a loss of 9 percent in volume but a gain of 11 percent in value over the 1939 totals for the eight months. Haddock, rosefish, cod, mackerel, flounders, and whiting led, in order, in the contributions to the volume received from January to August.

SMALL FISH PREDOMINATE IN 1940 ATLANTIC MACKEREL CATCH

According to John R. Webster, Assistant Aquatic Biologist for the Division of Fishery Biology, a comparison between the 1939 and 1940 landings of mackerel by the purse seine fishery exemplifies the extreme fluctuations for which the Atlantic Coast mackerel fishery is noted. In 1939, landings by seiners from April to September 15 amounted to about 11 million pounds. Over the same period in 1940, seiner catches have exceeded 22 million pounds. Fishing effort has been largely confined to the region of Cape Cod where inside and outside fishing has yielded about 5,700,000 pounds of mackerel. Of this amount, nearly five million pounds were landed as small fish, the remainder as large.

Mr. Webster reports that an analysis of mackerel length frequency samples reveals three size groups in the purse seine catch. There were about equal numbers of mackerel in each of two groups averaging 11 3/4 inches long (7/10 pound) and 13 1/2 inches (1 pound), respectively, and these two sizes were marketed mostly as small mackerel. The large mackerel averaged about 15 3/4 inches in length (1 3/4 pounds). Numerically, the small mackerel outnumbered the large at least 4 to 1.

On the whole, mackerel fishermen have found the season financially successful, so far. Returns have been such as to attract many former purse seine fishermen from other trawling back into the mackerel fishery, so that at the present time the seine fleet numbers about 35 vessels.

While mackerel landings for the present season to date are close to landings over the same period two years ago, until recently the 1940 fleet of vessels has been considerably smaller than the 1939 fleet.

BOSTON FISH SALES SHOW GAIN IN AUGUST

Fish landed at the Boston Fish Pier during August sold for \$797,000, a gain of 12 percent over the July figure and 15 percent over that of August 1939, according to statistics compiled by the Boston office of the Fishery Market News Service. August landings (881 fares) included 26,560,000 pounds of fish which sold at an average price of three cents per pound to the fishermen. The August landings were 6 percent smaller than those of July but a gain of 3 percent over those of August 1939.

Offshore vessels landed 22,558,000 pounds of fish, 85 percent of the total receipts at the Pier. Haddock furnished slightly over half of this offshore total and cod, mackerel, and rosefish followed in importance. Vessels operating in inshore waters landed 4,002,000 pounds, including chiefly whiting, haddock, flounders, and rosefish. Fares landed included 371 from offshore and 510 from inshore sources.

From January 1 to August 31 there were 160,722,000 pounds of landings received at the Boston Fish Pier, a decrease of 14 percent from the total for the corresponding period of 1939; however, the amount paid the fishermen during these 8 months in 1940 was greater by 9 percent than that paid in 1939, \$5,448,000 being received in 1940 and \$4,979,000 in 1939. Fares totaled 4,660 for the first 8 months in 1940 compared with 4,449 for the same portion of 1939.

FISHERIES OF MASSACHUSETTS

Gloucester fishing vessels closed their 1940 swordfish season with a total of 5,626 fish landed at various ports, according to the Service's fishery marketing agent in Massachusetts. This compares with a total of 7,872 fish taken in 1939. With the season ended, many swordfish vessels have been converted for dragging out of Boston for the balance of the year. Purse seining for tuna out of Gloucester has not been so satisfactory as it was in 1939. Floating fish traps operating near Gloucester have completed a disappointing fishing season.

FISHERIES OF VIRGINIA

During recent summer months the fisheries in Virginia for crabs, clams, and oysters have been below normal, according to the marketing agent operating for the Service in that State. Catches of fish have not been greatly at variance from normal. Croakers have not been so abundant as in 1939, and fishermen are receiving somewhat higher prices for them. A new industry has been developed to utilize the sea mussel resources along the Virginia coast. A number of fishermen have deserted clamming to obtain these mussels and are said to be obtaining a good daily wage for their operations.

SHARK PLANT IS COMPLETED IN KEY WEST

United States Ports for August 1940 makes note of the completion of a shark processing plant at Caxambas in Collier County, Florida. This plant is said to have apparatus for rendering shark livers and refining the oil obtained thereby for human consumption. By-products such as skins for leather, fins for food, and portions of the shark for novelties will be produced. The corporation that has constructed the plant is planning to operate its own fishery in Florida waters.

FISHERIES OF LOUISIANA

The storm which swept the Louisiana coast early in August has had considerable effect on the fishing industry of Louisiana, according to the Service's fishery marketing agent in that State. The oyster industry was particularly hard hit. A large volume of water from swamps was flooded onto many of the oyster reefs, carrying large quantities of sand and mud. It has been estimated that approximately 150,000 barrels of marketable oysters were lost.

FISHERIES OF THE GREAT LAKES

Fishing for yellow pike in the western end of Lake Erie and for whitefish in the eastern portion of this lake has been unusually good this year, according to the Service's marketing agent in the Great Lakes region. Fishing in the central portion of Lake Erie has been poor, however.

CHICAGO RECEIPTS OF FISH DECREASE IN AUGUST

A drop of 13 percent was recorded in August for the receipts of fishery products at the Chicago Wholesale Fish Market as compared with the volume received the previous month. The arrivals included 75 classifications of products, 27 of which were fresh-water fish, 36 were fish from salt waters, and 12 consisting of shellfish and miscellaneous items. Of the volume received, 46 percent was fresh-water fish, 43 percent salt-water fish, and 11 percent shellfish and miscellaneous items.

While a drop in the receipts of lake trout, whitefish, and shrimp, and a number of less important items, mainly from fresh-water sources, caused the receipts for August to fall below those of July, the total receipts from the first of January 1940 remained in considerable excess of those for the corresponding period of 1939.

Chicago Wholesale Receipts in Fishery Products

(From Fishery Market News Service Records)

Item	August 1940	Aug. 1940 compared with July 1940 August 1939		8-months Jan.-Aug. 1940	8-mo. 1940 com- pared with 8-mo. 1939
	Pounds	Percent	Percent	Pounds	Percent
Fresh-water items	1,684,000	-27	- 6	20,350,000	+18
Salt-water items	1,565,000	+26	+50	10,390,000	+45
Shellfish, etc.	391,000	-40	-14	6,062,000	+34
Total receipts	3,640,000	-13	+11	36,802,000	+27

Chicago Wholesale Receipts in Fishery Products--Continued
(From Fishery Market News Service Records)

Item	August 1940	Aug. 1940 compared with		8-months Jan.-Aug. 1940	8-mo. 1940 com- pared with 8-mo. 1939
		July 1940	August 1939		
	Pounds	Percent	Percent	Pounds	Percent
Leading items:					
Lake trout	384,000	- 18	- 10	3,456,000	+ 25
Whitefish	233,000	- 45	- 12	2,813,000	+ 52
Yellow perch	298,000	- 7	+ 55	1,824,000	+ 32
Halibut	763,000	+ 15	+ 36	5,059,000	+ 28
Rosefish fillets	341,000	+ 47	+104	2,310,000	+104
Salmon	285,000	+105	+146	798,000	+ 35
Shrimp	281,000	- 41	- 32	4,042,000	+ 17
Total, domestic	2,546,000	- 15	+ 10	25,524,000	+ 26
Total, imported	1,094,000	- 9	+ 12	11,278,000	+ 28
Leading sources:					
Massachusetts	588,000	+ 44	+ 88	3,734,000	+ 87
Michigan	430,000	- 26	- 6	4,735,000	+ 36
Wisconsin	296,000	- 41	- 25	5,140,000	+ 32
British Columbia	834,000	+ 17	+ 56	5,154,000	+ 70
Truck arrivals	1,367,000	- 14	+ 18	12,496,000	+ 46
Express arrivals	1,760,000	- 11	+ 19	12,873,000	+ 32
Freight arrivals	513,000	- 19	- 22	11,433,000	+ 7

FISHERIES OF CALIFORNIA

The Service's fishery marketing agent in California has reported that while the pilchard fishing season opened legally on August 1 in the Monterey and San Francisco regions, labor controversies delayed fishing in this section throughout August. This agent also reports that unusual activity was in evidence throughout California fishing ports in the building and rebuilding of boats in preparation for the coming mackerel season.

HEAVY SALMON RUNS PASS BONNEVILLE DAM

Recent reports from the War Department, which maintains observers at Bonneville Dam, provide interesting information on the season's run of salmon and steelhead trout in the Columbia River. Counts for most of the important species during the months of June and July show increases over the corresponding period of 1939, and even more striking increases over 1938. The larger runs of blueback salmon and steelhead trout are especially notable.

The chinook salmon runs at Bonneville during June and July totaled 21,966 fish, which shows very little change from the 1939 figure of 23,447 but is considerably larger than the 1938 run of 14,777 chinooks during the same months.

The blueback salmon first appeared in numbers at the dam about June 12, and by the end of the month were passing at the rate of more than 7,000 fish a day. By the end of July the heaviest runs of this species had passed. The total count for June and July was 145,524, or twice as great as either the 1939 or 1938 counts, which were 72,530 and 71,675, respectively.

This year an exceptionally heavy run of steelhead trout passed Bonneville, the count for June and July totaling 65,664 fish, as compared with 38,071 in 1939 and 21,837 in 1938.

During the first two years of the operation of the Bonneville fishways, shad ascended the ladders in comparatively small numbers, the count for June and July 1938 amounting to approximately 3,000 fish, and for the same period of 1939 approximately 4,500. This year, however, a total of 22,109 shad passed through the fishways during these two months.

Reversing the trend of the more valuable fishes, the miscellaneous species such as suckers, squawfish, etc., that are grouped together as scrapfish, show a consistent decline. In June and July 1938 the count of scrapfish was 269,895; in 1939, 130,742; and in 1940, 102,862.

TRANSFER OF COLUMBIA RIVER SALMON RUNS CONTINUES

Salmon-salvage operations have been actively continued throughout the summer, with the fish runs which are barred from their spawning grounds on the upper Columbia being trapped at Rock Island Dam and transferred to tributaries of the middle Columbia. According to a report received from Joseph A. Craig, in charge of the Fish and Wildlife Service's Columbia River salmon investigations, approximately 7,520 chinook salmon, 26,178 blueback salmon, and 2,173 steelhead trout were taken from the traps at Rock Island during the period from March 27 to August 17. These fish were planted in Lake Osceyoos, Nason Creek, the Wenatchee and Entiat Rivers, and in the holding ponds at Icicle Creek.

About one-third of the blueback run was planted in Lake Osceyoos, where a weir was installed early in July and an observer stationed for the season. The first load of blueback salmon was hauled to Lake Osceyoos on July 10, and the last load on August 2. In addition to 9,708 blueback salmon planted in the lake during this period, 161 chinook salmon, 139 steelhead trout, and miscellaneous scrapfish were transplanted. These fish will be allowed to spawn naturally, as will those planted in Nason Creek.

An additional weir has been constructed in the Entiat River at a location approximately 2 miles above the lower weir. Early in August approximately 100 chinook salmon were hauled to the Entiat and placed in the area between the 2 racks for a study of the mortality of the salmon before spawning. The weir in the Wenatchee River has also been completed and the first load of fish was hauled to this river on August 16.

On August 1 the staff resumed the stream surveys of the Columbia watershed, which had been suspended in 1939 when the entire personnel of the Columbia River investigation was detailed to the salmon salvage work in the vicinity of Rock Island. During August a survey of the Santiam River system was completed.

CANADIAN FISHERIES STATION ISSUES INSTRUCTIONS FOR STERILIZING FISH PLANTS

The Canadian Fisherman has published in its September issue a set of instructions for sterilizing fish curing plants, fish sheds, boat holds, and other space utilized in fish handling. This information, which is quoted hereafter, was furnished by the Canadian Atlantic Fisheries Experiment Station as Note No. 66:

"1. Cleaning. In order to sterilize any fish curing or storing premises they must be cleaned thoroughly first of all, otherwise the use of chemical disinfectants would be only a waste of time and money. Remove all loose and caked-on salt from floors, walls, rafters, beams, windows, salt bins, etc. by scrubbing thoroughly with a brush and fresh water. Remove in the same way all dirt, fish slime and dried fish 'gurry', so that all wooden parts are perfectly bare, using hot water if possible. When cleaned, wash everything down with plenty of fresh water. Where steam is available, follow up with a thorough treatment of all parts with live steam from a hose.

"2. Sterilizing. While the above cleaning has removed all the dirt, and with it many bacteria, the use of chemical disinfectants is necessary to assure the complete destruction of all remaining bacteria. In buildings which can be closed air-tight the use of burning sulphur or of formaldehyde vapours is effective.

"(a) Sulphur. Do not use on painted surfaces--at least 6 pounds of sulphur (flowers of sulphur or sublimed sulphur) for each 1,000 cubic feet of space to be disinfected are placed in a broad shallow iron pot, preferably from one to two feet in diameter and from three to six inches high. These are placed in pans containing about two inches of water, both to prevent damage if the pot cracks during the burning process, and to supply moisture essential to the success of the disinfection. The sulphur should not be more than three inches deep in the pot and should slope gently from the edge of the pot to the centre, where a crater is hollowed out and filled with an ounce of alcohol. To start combustion, this alcohol is lighted with a match. The sulphur burns slowly, and all cracks, doors and windows should be sealed with paper and paste to prevent escape of the fumes. At least 24 hours should be allowed before the room is opened.

"(b) Formaldehyde Vapours. 12 ounces of 'Formalin' and 6 ounces of 'Permanganate of Potash' crystals are required for each thousand cubic feet space to be disinfected. The temperature must be not less than 60° F. and the humidity must be at least 60 per cent. for successful results. It is convenient to place the permanganate in a 3-gallon galvanized-iron pail with flaring sides, because the reaction between permanganate and formalin is attended with considerable spattering. It is also advisable to place two or three layers of heavy paper under the pail, of sufficient size to project two feet at least in all directions, or better, to place a galvanized-iron plate of similar dimensions under the pail to catch all the liquid which is ejected from the pail during the process of evolution of the gas. To start the latter, pour the formalin over the permanganate in the pail. For successful disinfection all doors and windows should be tightly closed. The room should be left closed and undisturbed for at least 12 hours.

"For the disinfection of spaces which cannot be closed off airtight, the use of formaldehyde sprays is effective. They may be used also in closed rooms instead of burning sulphur or formaldehyde vapours.

"(c) Formaldehyde Sprays. Dilute one part of commercial 'Formalin' with 40 parts of water; use in a spray apparatus (portable rotary pump, 1/4 hp.) for spraying the cleaned walls, floors, bins, tables, etc. in the whole premises. In small communities one or two sprayers, owned cooperatively should be sufficient.

"Another method of disinfection is that of washing with a lye solution.

"(d) Solution of Lye. Wash all parts--floors, walls, tables, bins, etc. with a 2 per cent. solution of lye. Do not use on metallic surfaces.

"3. Whitewash. The best results are obtained, when the sterilizing process is finished with an application of a good coat of whitewash throughout the plant.

"It must be remembered that the red salt bacteria may be carried around on clothing, boots, mittens, hands, knives, etc. Once the premises are sterilized, care should therefore be taken not to re-infect them by going back and forth between them and infected, dirty sheds and stores.

"Infection can be kept down by keeping the premises as cool as possible, especially by proper ventilation. The whole process of sterilization of stores and sheds should be carried out at least twice a year, namely just before the fish are brought in at the beginning of the season, and again immediately after the premises are emptied, as soon as the fish are disposed of. Boat holds should be disinfected just before leaving for the fishing grounds, and after returning, immediately after the catch is landed. When necessary, double strength solution for formaldehyde sprays should be used, i.e., 1 part formalin to 20 parts of water."

AUSTRALIA PLANS ENLARGEMENT OF HER FISHERY INDUSTRIES

A report submitted to the Bureau of Foreign and Domestic Commerce by the American Consulate at Sydney, Australia, states that while Australian coastal waters contain many species of fish of potential commercial value, the fishing industry has not been developed to any-

thing like its full capacity. Until recently Australian markets utilized imported fish supplies almost exclusively but during recent years the Australian fishery activities have increased considerably.

The possibilities of extending the Australian fishing industry have been studied for some years by the Commonwealth Government through the Council for Scientific and Industrial Research. The Council has utilized a special research vessel in explorations, and a national fisheries laboratory and research station has been built equipped with experimental apparatus for the preservation of fish for food. The laboratory was established at Port Hacking near Sydney in 1939.

The pioneering studies of the Fisheries Section of the Council are expected to lay the basis for a sound industry in fish canning. Imports of canned fish in the year 1938-39 totaled about 30 million pounds, over half of which was salmon. Most of the canned salmon was supplied by Canada, with Japan, the United States, and Russia supplying most of the remainder. Since the start of war in September 1939, imports of fish have been reduced by restrictive measures placed on imports due to the depreciation of Australia's pound in relation to the dollar. The development of local fish canning activities is being urged for replacement of some of the imported lines of fishery products.

Activities of the new biological station has included the supervision of the research vessel Warreen, which was placed in commission in May 1938. During the vessel's first year of deep sea investigations it covered approximately 30,000 miles in the area to the south-east of Australia. The principal objective in its operations has been to keep in touch with the distribution and movements of the chief pelagic fishes. Much evidence of the presence of the tuna group of fishes was obtained, making it virtually certain that the numbers and distribution of this group are such that a commercial fishery can be established. Studies of the pilchard in this area have given inconclusive evidence in the judging of the abundance of this species. The pilchards captured during the early investigations were small. Other fishes studied have included Australian salmon, mullet, barracuda, and bait fishes. Observations have also been made concerning the occurrence of oysters, and an intensive study of the basic physical and biological factors at work in the whole of the area covered has been initiated. The staff utilized on the vessel has included a biologist, a hydrologist, and a graduate technical assistant.

The operations of the vessel have been augmented by two series of flights by an amphibian airplane made available by the Royal Australian Air Force. One of the Council's officers acted as observer and photographer on the flights.

FISHERIES OF PORTUGAL IMPROVE THEIR POSITION IN 1939

Recognition of the critical importance of food supplies such as canned fish in countries engaged in war has obviously been a leading factor in an improvement in the condition of the Portuguese commercial fisheries. In Foodstuffs Round the World for August 30 appears a general summary of the fishery activities in Portugal in 1939. This article, which was taken from a report from the American Consulate General at Lisbon, states: "The fishing industry did not suffer as much as figures of its yield in 1939 would indicate. Fish caught in the first 10 months of 1939 totaled 133,832 tons as contrasted with but 164,354 tons in the same period of the preceding year, but the value of the 1939 catch was 137 million escudos against 136 million escudos in 1938.

"The same condition applied to the sardine catch which, according to preliminary figures for the same period, totaled 50,770 tons valued at 47 million escudos in 1939 against 89,453 tons valued at 49 million escudos in 1938. Of these amounts 23,055 tons were canned in the year under review and 25,467 tons in 1938.

"Exports increased, however, by about one-third and provided an encouraging element to this important industry which has been seriously affected by a scarcity of fish. Heavy stocks carried over from 1938 have been reduced to a negligible quantity.

"Conditions have been particularly severe in the Setubal area and southern Portugal and the canning industry has not recovered from the depression of 1938. The unsatisfactory

condition has been extremely prejudicial to an industry which employs approximately 50,000 people.

"The returns of the Portuguese codfishing fleet have shown constant gains since 1930; in 1937 a total of 16,491 tons of fresh cod were caught and in 1938 the catch totaled 18,000 tons. This was roughly equivalent to 25 percent of the local consumption; 48 vessels went to the Grand Banks in 1939. The construction of additional vessels, with government assistance, was completed in 1939 and will be continued in 1940. These measures should materially increase the output."

Note: The Portuguese escudo had an average exchange value of \$.0443 in 1938 and of \$.0404 in 1939.

FROZEN FISH TRADE

Halibut First among Frozen Fishery Products in U. S. Cold-storage Plants

One-sixth of the total holdings of frozen fishery products in United States cold-storage plants on September 15 was composed of halibut. Other important frozen items were whiting, mackerel, salmon, and haddock fillets. Large quantities of cured herring and mild-cured salmon were also held on that date.

Holdings of Fishery Products in United States Cold-storage Plants ^{1/}

Item	Sept. 15 1940	Sept. 15 compared with			August 15 1940	September 15 1939	5-yr. Average Sept. 15
		Sept. 15 1940	Sept. 15 1939	5-yr. av. Sept. 15			
	Pounds	Percent	Percent	Percent	Pounds	Pounds	Pounds
Frozen fish and shellfish							
New England	28,931,000	+ 7	+ 4	*	26,937,000	27,707,000	*
Middle Atlantic	12,647,000	+ 5	+ 6	*	11,990,000	11,928,000	*
South Atlantic	3,912,000	+ 4	-29	*	3,775,000	5,472,000	*
Central	15,241,000	+23	+ 6	*	12,404,000	14,348,000	*
Pacific	24,837,000	+16	+26	*	21,390,000	19,717,000	*
All fish	79,820,000	+12	+11	+12	71,158,000	72,166,000	71,558,000
All shellfish	5,748,000	+ 8	-20	+ 8	5,321,000	7,217,000	5,335,000
Total holdings	85,568,000	+12	+ 8	+11	76,479,000	79,383,000	76,893,000
Important items:							
Cod fillets	1,711,000	+ 7	-25	*	1,595,000	2,277,000	*
Croakers	1,596,000	-12	-53	-23	1,814,000	3,387,000	2,073,000
Haddock fillets	7,924,000	+26	+ 4	+ 1	6,268,000	7,591,000	7,848,000
Halibut	14,252,000	+ 2	+29	+20	13,967,000	11,028,000	11,916,000
Mackerel	8,931,000	+13	+42	+38	7,918,000	6,273,000	6,469,000
Rosefish fillets	2,053,000	-21	-36	*	2,597,000	3,206,000	*
Salmon	8,519,000	+71	+54	+19	4,996,000	5,529,000	7,173,000
Whiting	10,837,000	+14	+11	- 1	9,469,000	9,757,000	10,928,000
Scallops	1,615,000	+ 2	+29	*	1,579,000	1,254,000	*
Shrimp	1,913,000	+27	-23	*	1,510,000	2,474,000	*
Cured fish:							
Herring, cured	23,491,000	- 4	+42	+49	24,534,000	16,516,000	15,790,000
Salmon, mild-cured	7,117,000	+ 2	- 9	- 1	6,992,000	7,815,000	7,179,000

^{1/} Statistics furnished by the Agricultural Marketing Service, Department of Agriculture.

* Data not available.

Freezing of fishery products during the month ending September 15 was characterized by large increases in the rate of freezing of shrimp and salmon and a large drop in the halibut handled. The increased freezing of shrimp was largely responsible for an increase of 37 percent in the freezing of shellfish over the activity during the previous month.

Fishery Products Frozen in United States Cold-storage Plants 1/

(Figures are for the month ending on the date indicated)

Item	Sept. 15 1940	Sept. 15 compared with			August 15 1940	September 15 1939	5-yr. Average Sept. 15
		Aug. 15 1940	Sept. 15 1939	5-yr. av. Sept. 15			
	Pounds	Percent	Percent	Percent	Pounds	Pounds	Pounds
Fish	21,040,000	- 8	+ 9	+23	22,933,000	19,230,000	17,101,000
Shellfish	2,302,000	+ 37	+ 83	+98	1,683,000	1,256,000	1,164,000
Total products	23,342,000	- 5	+ 14	+28	24,616,000	20,486,000	18,265,000
Important items:							
Cod fillets	616,000	- 34	+ 46	*	935,000	422,000	*
Haddock fillets	2,321,000	- 23	- 19	-13	3,032,000	2,881,000	2,657,000
Halibut	1,235,000	- 45	+113	+20	2,233,000	580,000	1,026,000
Mackerel	2,047,000	+ 18	- 43	+57	1,731,000	3,618,000	1,300,000
Rosefish fillets	2,140,000	- 21	+ 21	*	2,701,000	1,764,000	*
Salmon	3,976,000	+ 78	+ 58	+24	2,230,000	2,511,000	3,195,000
Whiting	4,393,000	- 6	+ 87	+96	4,690,000	2,354,000	2,238,000
Shrimp	1,439,000	+391	+131	*	293,000	623,000	*
Scallops	329,000	- 37	- 19	*	524,000	405,000	*

1/ Statistics furnished by the Agricultural Marketing Service, Department of Agriculture.

* Data not available.

Boston Cold-storage Holdings Increase Eight Percent in September

The stocks of frozen fishery products in cold-storage plants in Boston were 8 percent larger on September 25 than they were four weeks earlier. Salt-water fish constituted the major portion of the holdings, with almost 93 percent of the total; shellfish, etc., composed 7 percent; and fresh-water fish provided less than half of one percent. An increase in haddock fillet stocks was largely responsible for the gain in the four-week period, while gains in supplies of mackerel, smelt, and whiting this year were the main factors providing an increase over the holdings of a year ago.

Holdings of Fishery Products in Cold Storage - Boston

(From Fishery Market News Service Records)

Item	Sept. 25, 1940	Sept. 25 compared with		Aug. 28, 1940	Sept. 27, 1939
		Aug. 28, 1940	Sept. 27, 1939		
	Pounds	Percent	Percent	Pounds	Pounds
Salt-water fish	14,385,000	+ 9	+ 12	13,164,000	12,872,000
Fresh-water fish	42,000	+27	+ 5	33,000	40,000
Shellfish, etc.	1,133,000	- 3	- 25	1,166,000	1,502,000
Total	15,560,000	+ 8	+ 8	14,363,000	14,414,000
Important items:					
Cod fillets	681,000	-13	- 42	787,000	1,180,000
Haddock fillets	4,201,000	+20	- 12	3,500,000	4,762,000
Mackerel	4,169,000	+ 7	+ 61	3,909,000	2,595,000
Rosefish fillets	97,000	-44	- 76	173,000	397,000
Smelt	455,000	-10	+207	507,000	148,000
Swordfish	682,000	+28	+ 6	532,000	642,000
Whiting	2,207,000	+ 7	+ 35	2,067,000	1,631,000
Scallops	499,000	+14	+ 5	439,000	473,000
Squid	512,000	+ 3	- 49	498,000	1,004,000

New York Cold-storage Holdings of Salmon, Whitefish, and Shrimp Show Increase

Comparatively large increases in the stocks of king and silver salmon, whitefish, and shrimp were largely responsible for a 13 percent increase in the holdings of frozen fishery products in New York cold-storage plants during the four weeks ending September 26. Increases of whitefish and mackerel stocks and a decrease in the supply of sturgeon contributed the major changes in the stocks between September 26 and the corresponding date of a year previous. The cold-storage stocks of September 26 consisted of 51 percent salt-water fish, 31 percent fresh-water fish, and 18 percent shellfish and other items.

Holdings of Fishery Products in Cold Storage - New York
(From Fishery Market News Service Records)

Item	Sept. 26, 1940	Sept. 26 compared with		Aug. 29, 1940	Sept. 28, 1939
		Aug. 29, 1940	Sept. 28, 1939		
	Pounds	Percent	Percent	Pounds	Pounds
Salt-water fish	3,895,000	+ 7	+ 6	3,635,000	3,690,000
Fresh-water fish	2,392,000	+17	+ 7	2,045,000	2,238,000
Shellfish, etc.	1,366,000	+24	- 20	1,102,000	1,710,000
Total	7,653,000	+13	0	6,782,000	7,638,000
Important items:					
Butterfish	251,000	+ 3	- 51	244,000	510,000
King salmon	443,000	+16	+109	382,000	212,000
Mackerel	1,060,000	- 3	+ 91	1,091,000	556,000
Shad	254,000	-10	- 44	281,000	453,000
Silver salmon	262,000	+68	+396	156,000	53,000
Swordfish	167,000	-19	+ 8	206,000	155,000
Ciscoes	101,000	- 9	- 64	111,000	282,000
Sturgeon	602,000	+ 1	- 42	598,000	1,034,000
Whitefish	1,175,000	+30	+100	902,000	588,000
Scallops	330,000	+24	- 6	266,000	350,000
Shrimp	568,000	+89	+ 37	300,000	414,000
Squid	130,000	-46	- 72	242,000	464,000

Salt-water Fish Predominate in Chicago Cold-storage Holdings

Cold-storage plants in Chicago on September 26 held 3,471,000 pounds of frozen fishery products--40 percent salt-water fish, 37 percent fresh-water fish, 15 percent shellfish, and 8 percent unclassified items. The proportion of salt-water fish in the holdings was considerably larger than it was four weeks earlier and on the corresponding date in 1939, due largely to lowered stocks of blue pike and sauger and increases in the stocks of halibut and cod fillets.

Holdings of Fishery Products in Cold Storage - Chicago
(From Fishery Market News Service Records)

Item	Sept. 26, 1940	Sept. 26 compared with		Aug. 29, 1940	Sept. 28, 1939
		Aug. 29, 1940	Sept. 28, 1939		
	Pounds	Percent	Percent	Pounds	Pounds
Fresh-water fish	1,296,000	- 3	- 49	1,340,000	2,520,000
Salt-water fish	1,381,000	+30	- 9	1,060,000	1,270,000
Shellfish	530,000	+14	- 2	463,000	540,000
Unclassified	264,000	-35	- 5	406,000	278,000
Total	3,471,000	+ 6	- 25	3,269,000	4,608,000

Holdings of Fishery Products in Cold Storage - Chicago--Continued

(From Fishery Market News Service Records)

Item	Sept. 26, 1940	Sept. 26 compared with		Aug. 29, 1940	Sept. 28, 1939
		Aug. 29, 1940	Sept. 28, 1939		
	Pounds	Percent	Percent	Percent	Percent
Important items:					
Blue pike and sauger	70,000	-31	- 92	102,000	830,000
Lake herring and chubs	228,000	+ 2	- 34	224,000	345,000
Lake trout	1,181,000	+28	- 15	92,000	138,000
Smelt	284,000	- 5	- 28	298,000	397,000
Whitefish	294,000	- 5	+ 3	310,000	285,000
Cod fillets	198,000	+42	+170	139,000	73,000
Halibut	436,000	+46	+117	299,000	201,000
Rosefish fillets	139,000	+89	- 61	73,000	351,000
Scallops	158,000	- 9	+ 69	174,000	94,000
Shrimp	254,000	+30	- 11	196,000	284,000

Canadian Freezing Plants Increase Holdings of Salmon

Frozen fresh fishery products on hand in Canadian cold-storage plants on October 1 totaled 32,378,000 pounds. Stocks of salmon, sea herring, and halibut were predominant among items contributing to this total. Salmon stocks increased about 100 percent over the holdings of salmon on September 1. The total holdings represented an increase of 6 percent over those of September 1 and a decrease of 6 percent from the October 1, 1939, figure. These figures have been published as preliminary totals by the Dominion Bureau of Statistics.

Frozen smoked fishery products held on October 1 totaled 2,153,000 pounds and included sea herring kippers and groundfish fillets. This total was one-half of one percent lower than the corresponding figure of a month earlier.

Activity in the freezing of fishery items in Canada during September covered 7,823,000 pounds of fresh items and 529,000 pounds of smoked products. Freezing of fresh items suffered a drop from the August figure of over 14 million pounds, largely due to a decline in the freezing of sea herring. Salmon and sea herring were the two leading fresh items handled. Among the smoked products handled, groundfish fillets and sea herring kippers were frozen in greatest quantity during September.

CANNED FISH TRADE

Canned Salmon Stocks Decline from Totals of 1939

A decline of over 800,000 48-pound standard cases occurred between September 30, 1939, and September 30, 1940, in the stocks of canned salmon unsold in the hands of packers. This decline, reflected in figures issued by the Association of Pacific Fisheries, was largely due to a drop of almost 70 percent in the supply of Alaska red salmon on hand. The stocks of salmon were reported as follows:

Item	Canned Salmon Unsold--Standard Cases		
	September 30 1940	September 15 1940	September 30 1939
Chinook or king	129,000	126,000	59,000
Chum	87,000	125,000	142,000
Humpback or pink	651,000	762,000	637,000
Silver or coho	233,000	221,000	71,000
Alaska red	466,000	523,000	1,514,000
Puget Sound sockeye	50,000	46,000	33,000
Bluebacks and steelheads	8,000	8,000	2,000
Total	1,624,000	1,811,000	2,458,000

The following quotations for canned salmon, f.o.b. Pacific Coast shipping points, were reported by Seattle salmon brokers to the Fishery Market News office in Seattle.

Item	Can size	Quotation Oct. 1, 1940 per dozen cans
Alaska red	1 lb. tall	\$2.45 - 2.50
Chinook, Columbia River	1 lb. flat	4.00
Silver or coho	1 lb. tall	1.85 - 2.00
Chum	1 lb. tall	1.25
Humpback or pink	1 lb. tall	1.40

1940 Shrimp Packing Lags Behind Previous Seasons

Two hundred thirty-four thousand standard cases (48 5-3/4 ounce cans) packed during September raised the total of shrimp canned between July 1 and September 30 to 361,000 cases. These shrimp were canned at the 40 plants in the South Atlantic and Gulf States which are covered by the Seafood Inspection Service of the Food and Drug Administration. The July-September 1940 total compares with totals of 504,000 and 429,000 cases packed during the first three months of the 1939-40 and 1938-39 seasons.

Prices of canned shrimp in usual wholesale quantities, f.o.b. point of production, on October 1, 1940, were reported by Gulf Coast packers as follows:

	Per dozen No. 1 tall tins	
	<u>Wet pack</u>	<u>Dry pack</u>
Small	\$1.05 - 1.15	\$1.05 - 1.10
Medium	1.10 - 1.20	1.10 - 1.20
Large	1.15 - 1.25	1.15 - 1.25
Extra large or jumbo	1.20 - 1.30	1.20 - 1.30

Yellowfin Tuna Providing Over Half of California Tuna Pack

California canneries packed 609,000 standard cases of tuna and 47,000 standard cases of mackerel during August, according to a preliminary report issued by the California Division of Fish and Game. The 1940 pack of tuna to August 31 was 2,618,000 cases, compared with 2,291,000 cases for the same portion of 1939. Of the pack, 1,280,000 cases were canned in the San Pedro district and 1,338,000 cases were packed in the San Diego area. Fifty-four percent of the total consisted of yellowfin tuna; and striped tuna; bluefin; tuna, tonno style; tuna flakes; yellowtail; albacore; and bonito followed in order.

The 1940 mackerel pack to August 31 was 418,000 standard cases, 383,000 packed in the San Pedro district and 35,000 cases in the San Diego region. The total for the corresponding period in 1939 was 287,000 standard cases.

FOREIGN FISHERY TRADE

Canned Salmon Again Leads Exports

In August, for the third successive month, canned salmon comprised over half of the total United States exports of edible fishery commodities and also composed nearly one quarter of the total August movement in imports and exports. The trade in edible fishery commodities in August totaled 33,271,000 pounds, an 8 percent decrease from the total of 36,106,000 pounds of August of the previous year.

Imports during August totaled 22,731,000 pounds, a 19 percent drop from the August 1939 figure. The decline was partially due to lowered imports of canned sardines, canned crab meat, canned tuna, and pickled or salted herring. Pickled or salted cod, haddock, hake, etc., was the leading import item, showing a considerable increase over August 1939.

For the first eight months of 1940, 195,521,000 pounds of imports were recorded, a decrease of 14 percent from the corresponding period in 1939. Lowered imports of canned sardines, from 19,195,000 pounds in 1939 to 9,310,000 pounds for 1940, were responsible for a major portion of the decrease.

An increase of 161 percent over the August 1939 figure was recorded for canned salmon exports in August 1940. This gain was mainly responsible for a 34 percent rise in total exports over August of the previous year. Combined exports totaled 10,539,000 pounds, of which 72 percent was canned salmon. Canned sardines was second in importance with 1,869,000 pounds exported, a loss of 34 percent from the August 1939 total.

A 73 percent increase in canned salmon exports and a 62 percent gain in those of canned sardines were the main causative factors in a 40 percent rise in exports of all edible fishery commodities for the first eight months of 1940 as compared with the January - August 1939 period. The two commodities produced a combined increase of 36,900,000 pounds and contributed 89,100,000 pounds to the 100,201,000 pounds of total exports in the eight months' period for 1940. There were 48,301,000 pounds of canned sardines and 40,766,000 pounds of canned salmon exported during the first eight months of this year.

THE COVER PAGE

The major portion of the catch of pilchards is taken by purse seines operated from vessels such as is pictured on the cover page. The pilchard fishery, which is prosecuted off the coasts of California, Oregon, and Washington, yields the largest poundage of fish of any American fishing activity. In 1936, the year of the largest catch of pilchards, there were $1\frac{1}{2}$ billion pounds of this fish captured, 31 percent of the poundage of the entire commercial catch of the United States and Alaska. These fish were converted into canned pilchards valued at \$7,300,000, meal valued at \$4,000,000, and oil valued at \$8,300,000.

In 1939 the pilchard catch was utilized for canned products valued at \$9,600,000, meal valued at \$4,100,000, and oil valued at \$5,100,000.

A STUDY ON THE NUTRITIVE VALUE OF CRAB MEAT

By William B. Lanham, Jr., and Charles F. Lee, Junior Chemists
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Division of Fishery Industries

Fish and Wildlife Service

In gustatory or "appetite appeal" value, crab meat ranks high among the seafoods and many recipes are available which facilitate the serving of crab meat in forms strongly appealing to both the appetite and the eye.

Many inquiries have been received by the Fish and Wildlife Service from dieticians, home economics nutrition specialists, and others concerning the nutritive value of the various types of crab meat preparations. In order to answer these questions specifically, a series of determinations has been carried out at the College Park laboratory of the Service during the past few years.

Proteins, minerals, and vitamins are the principal food elements in crab meat. The crab meat study attempted to determine the nutritive value of the protein and mineral content of the various types of crab meat.

The following crab meat preparations were assayed:

- Blue crab (*Callinectes sapidus*)
 - Chilled white meat
 - Canned white meat
 - Chilled claw meat
 - Canned claw meat
- King crab (*Paralithodes camtschatica*)
 - Imported Japanese canned meat
- Dungeness crab (*Cancer magister*)
 - Canned meat

The Biological Value of the Protein

The biological value for maintenance was determined by metabolism studies with rats. The biological value for maintenance refers to the availability of the protein to maintain the weight of the adult animal. A protein with a biological value approaching 100 is very superior while a protein characterized by a biological value of about 20 to 30 is very inferior.

In the following table is presented the biological value of the protein in the various types of crab meat studied.

	Biological value of protein
Blue crab	
Chilled white meat	74.5
Canned white meat	71.7
Chilled claw meat	76.9
Canned claw meat	78.3
King crab	
Imported Japanese canned meat	77.9
Dungeness crab	
Canned meat	68.9
Beef round (control)	70.2

The foregoing data show that the biological value of the protein of crab meat equals or is slightly superior to that of beef round. The differences noted should not be overemphasized since a statistical study shows that the difference in value between canned claw meat and

beef (78.3 and 70.2) is barely statistically significant. Of the difference between imported Japanese crab meat and beef (77.9 and 70.2), 8 percent is due to experimental error and 92 percent to actual difference in the biological value of the protein. A difference of this degree is considered indicative but not statistically significant.

The Digestibility of the Protein

A study of the comparative digestibility of the crab meat was also conducted. The corrected digestibility values refer to the relative quantity of food that is actually absorbed into the body from the intestinal tract.

In the following table is presented the corrected digestibility values of the various types of crab meat studied.

	Corrected digest- ibility values
	<u>Percent</u>
Blue crab:	
Chilled white meat	91.3
Canned white meat	93.3
Chilled claw meat	89.9
Canned claw meat	85.6
King crab	
Imported Japanese canned meat	98.8
Dungeness crab	
Canned meat	88.3
Beef round (control)	88.7

These data show that the protein of crab meat is very digestible. This determination, together with the fact that crab meat has a satisfactory biological value, indicates that crab meat may be included in the class of foods which is advertised and referred to as being highly nutritious.

The Mineral Content

The quantity of five mineral elements essential in nutrition was determined in each of the samples of crab meat, and following is a table showing the results obtained.

The Content of Some Essential Minerals in Crab Meat and Beef Round ¹/₂
(Percent by weight of the fresh edible portion)

Item	Number of samples	Dry matter	Calcium	Magnesium	Phosphorus	Iron	Copper
Blue crab:							
Chilled white meat	2	21.5	0.0899	0.0314	0.1867	0.003480	0.001020
Canned white meat	1	20.2	0.0738	0.0288	0.2006	0.001156	0.000914
Chilled claw meat	2	22.8	0.0742	0.0384	0.1480	0.005442	0.000977
Canned claw meat	1	21.1	0.0583	0.0243	0.1541	0.001231	0.000908
King crab							
Imported Japanese canned meat	2	20.5	0.0277	0.0449	0.1727	0.000190	0.000337
Dungeness crab							
Canned meat	1	23.8	0.0125	0.0254	0.1688	0.000795	0.000417
Beef round (control)	-	36.9	0.012	0.024	0.216	0.0030	0.00010

¹/₂ The data included in this table are supplementary to those reported in U. S. Bureau of Fisheries Investigational Report No. 41 entitled "The Mineral Content of the Edible Portions of Some American Fishery Products" by Hugo W. Nilson and E. J. Coulson. The significance of the mineral elements in nutrition is also outlined in this investigational report.

Note.--Four units to the right of the decimal point equals parts per million, or mgms. per kgm.

In general, the crab meat preparations studied were found to be excellent sources of the several mineral elements essential in the nutrition of man.

FISHERY TRADE INDICATORS
(Expressed in Thousands of Pounds)

Item	Month	Latest month	Same month a year ago	Previous month
FRESH FISH LANDINGS				
Boston, Mass.	August	27,624	27,843	30,177
Gloucester, Mass.	do	12,790	9,687	12,692
Portland, Me.	do	4,433	1,594	4,983
Boston, Gloucester, and Portland:				
Cod.....	do	5,987	5,251	7,086
Haddock.....	do	13,414	14,352	17,407
Pollock.....	do	943	655	564
Rosefish.....	do	8,856	8,356	10,489
Pacific Coast:				
Halibut, North Pacific ports.....	do	5,222	5,358	9,559
Halibut, Seattle.....	do	2,079	2,385	3,604
FISH RECEIPTS, CHICAGO 1/				
Salt-water fish.....	do	1,565	1,041	1,242
Fresh-water fish.....	do	1,684	1,800	2,303
Shellfish, etc.	do	391	454	647
By truck.....	do	1,366	1,160	1,590
By express.....	do	1,760	1,473	1,967
By freight.....	do	513	661	636
COLD-STORAGE HOLDINGS 2/				
New York, N. Y.:				
Salt-water fish.....	September	3,895	3,691	3,635
Fresh-water fish.....	do	2,392	2,238	2,045
Shellfish, etc.	do	1,365	1,710	1,101
Boston, Mass.:				
Salt-water fish.....	do	14,385	12,873	13,163
Fresh-water fish.....	do	42	40	33
Shellfish, etc.	do	1,133	1,502	1,166
Chicago, Ill.:				
Salt-water fish.....	do	1,381	1,270	1,060
Fresh-water fish.....	do	1,295	2,520	1,340
Shellfish, etc.	do	531	540	463
Unclassified.....	do	264	278	406
United States:				
Cod fillets.....	do	1,711	2,277	1,595
Haddock fillets.....	do	7,924	7,591	6,268
Halibut.....	do	14,252	11,028	13,967
Mackerel.....	do	8,931	6,273	7,918
Pollock fillets.....	do	345	178	343
Rosefish fillets.....	do	2,053	3,206	2,597
Salmon.....	do	8,519	5,529	4,998
Whiting.....	do	10,837	9,757	9,469
Shrimp.....	do	1,913	2,474	1,510
New England, all species.....	do	28,931	27,708	26,937
Middle Atlantic, all species.....	do	12,647	11,935	11,990
South Atlantic, all species.....	do	3,912	5,472	3,775
North Central East, all species.....	do	10,796	10,071	9,249
North Central West, all species.....	do	2,544	2,888	2,191
South Central, all species.....	do	1,901	1,427	964
Pacific, all species.....	do	24,836	19,882	21,390
FOREIGN FISHERY TRADE 3/				
Exports:				
All edible fishery commodities.....	August	10,539	7,872	18,054
Canned salmon.....	do	7,548	2,888	11,941
Canned sardines.....	do	1,869	2,842	4,632
Canned shrimp.....	do	126	456	114
Imports:				
All edible fishery commodities.....	do	22,731	28,234	19,864
Fresh-water fish and eels, fresh or frozen...	do	3,405	3,723	3,698
Canned tuna.....	do	584	923	465
Canned sardines.....	do	1,041	3,455	864
Cod, haddock, hake, etc., pickled or salted..	do	6,156	4,882	3,036
Herring, pickled or salted.....	do	276	510	225
Crab meat, sauce, etc.	do	680	1,025	565
Lobsters, not canned.....	do	949	916	1,345
Lobsters, canned.....	do	270	40	177

1/ Includes all arrivals as reported by express and rail terminals, and truck receipts as reported by wholesale dealers, including smokers.

2/ Data for individual cities are as of the last Thursday of the month, except those at Boston which are for the last Wednesday of the month, and those for geographical areas and the total of the United States which are as of the 15th of the month.

3/ From data compiled by the Bureau of Foreign and Domestic Commerce.

Note.—Data for the latest month are subject to revision.

FISHERY INDUSTRIAL AND MARKETING PUBLICATIONS

There follows a list of some of the industrial or marketing publications of the Fish and Wildlife Service which are available for purchase from the Superintendent of Documents, Government Printing Office, Washington, D. C., at the prices quoted. Price List 21, the most complete list of titles and prices of fishery sales publications of the Service, may be obtained from the Superintendent of Documents free of charge.

INVESTIGATIONAL REPORTS

- No. 43. Some Effects of Ultraviolet Irradiation of Haddock Fillets. 1939. 5¢.
- No. 42. A Plan for the Development of the Hawaiian Fisheries. 1939. 10¢.
- No. 41. The Mineral Content of the Edible Portions of Some American Fishery Products. 1938. 5¢.
- No. 40. Pacific Salmon Oils. 1939. 5¢.
- No. 39. Trade in Fresh and Frozen Fishery Products and Related Marketing Considerations in the San Francisco Bay Area. 1938. 10¢.
- No. 38. Marketing of Shad on the Atlantic Coast. 1938. 10¢.
- No. 37. Preliminary Report on the Cause of the Decline of the Oyster Industry of the York River, Va., and the Effects of Pulp-mill Pollution on Oysters. 1938. 10¢.
- No. 32. Studies on Drying Cod and Haddock Waste. 1935. 5¢.
- No. 30. Effect of Manufacture on the Quality of Nonoily Fish Meals. 1935. 5¢.
- No. 28. Studies on the Utilization of Swordfish Livers. 1935. 5¢.
- No. 26. Fishery for Red Snappers and Groupers in the Gulf of Mexico. 1935. 5¢.
- No. 25. The Iodine Content of Some American Fishery Products. 1935. 5¢.
- No. 24. Modifications in Gear Curtail the Destruction of Undersized Fish in Otter Trawling. 1935. 5¢.
- No. 20. Studies on the Smoking of Haddock. 1934. 5¢.
- No. 18. The Iodine Content of Oysters. 1934. 5¢.
- No. 16. Developments in Refrigeration of Fish in the United States. 1932. 5¢.
- No. 14. Fisheries of the Virgin Islands of the United States. 1932. 5¢.
- No. 13. Fisheries of Puerto Rico. 1932. 5¢.
- No. 7. Market for Marine Animal Bils in the United States. 1931. 15¢.
- No. 1. Menhaden Industry. 1931. 25¢.

FISHERY CIRCULARS

- No. 25. Natural History and Methods of Controlling the Common Oyster Drills. 1937. 5¢.
- No. 23. Decline in Haddock Abundance on Georges Bank and a Practical Remedy. 1936. 5¢.
- No. 22. Organizing and Incorporating Fishery Cooperative Marketing Associations. 1936. 5¢.
- No. 21. The Story of Oysters. 1936. 5¢.
- No. 19. Practical Fish Cookery. 1935. 5¢.
- No. 18. Conditions Affecting the Southern Winter Trawl Fishery. 1935. 5¢.
- No. 15. Aquatic Shell Industries. 1934. 5¢.
- No. 12. Introduction of Japanese Oysters into the United States. 1932. 5¢.
- No. 11. Some Unusual Markets for Fish and Shellfish. 1932. 5¢.
- No. 3. Market for Fresh Oysters in 14 Cities of the United States. 1931. 10¢.

ECONOMIC CIRCULARS

- No. 74. Application of Preservatives to Fishing Nets. 1931. 5¢.
- No. 69. Salmon--an Economical and Valuable Food. 1929. 10¢.

DOCUMENTS

- No. 1092. Pacific Salmon Fisheries. 1930. 65¢.
- No. 1078. Utilization of Shrimp Waste. 1930. 10¢.
- No. 1075. Net Preservative Treatments 1930. 5¢.
- No. 1065. Bibliography on Cod-liver Oil in Animal Feeding. 1929. 10¢.
- No. 1059. Fishing Grounds of the Gulf of Maine. 1929. 25¢.

ADMINISTRATIVE REPORTS

- No. 37. Fishery Industries of the United States, 1938. 35¢.
- No. 36. Alaska Fishery and Fur-seal Industries in 1938. 15¢.
- No. 35. Progress in Biological Inquiries, 1938. 15¢.
- No. 34. Propagation and Distribution of Food Fishes, Fiscal Year 1938. 10¢.

ORDERS FOR THE ABOVE-LISTED PUBLICATIONS SHOULD BE FORWARDED DIRECT TO THE
SUPERINTENDENT OF DOCUMENTS, GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C.,
AND NOT TO THE FISH AND WILDLIFE SERVICE

THE MINERAL CONTENT OF THE EDIBLE PORTIONS OF SOME AMERICAN FISHERY PRODUCTS

Investigational Report No. 41

In addition to the established value of fishery products as protein foods and the importance of many of them as sources of vitamins, seafoods also are excellent sources of many essential minerals, according to Fisheries Investigational Report No. 41, entitled "The Mineral Content of the Edible Portions of Some American Fishery Products", by Hugo W. Nilson and E. J. Coulson. The report brings out the following facts, among others:

1. The flesh of canned salmon is an excellent source of protein and calories. The bones are soft and are an exceptional source of bone forming minerals. Canned salmon contains an equal quantity of magnesium, almost twice the phosphorus and about fifteen times as much calcium as beef round.

2. Oysters are an excellent source of iron and copper and are one of the best sources of iodine. They follow pork and beef as a source of iron and are first in copper content among common food stuffs on the basis of an average serving portion. They also contain almost half as much calcium, 5 times as much magnesium and more phosphorus than milk on an equal weight basis.

3. Shrimp contain an equal quantity of phosphorus, twice the magnesium, and almost 5 times as much calcium as beef round. They include almost one-half the iron content of oysters and the copper content approximates that of white bread. Shrimp also is an excellent source of iodine.

The report also includes information on the mineral content of fillets and crab meat and discusses the daily requirements of essential minerals.

The report may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents. If purchased in quantity lots of 100 or more, a discount of 25 percent is allowed.

